Serial No. 09/663,490
Art Unit No. 2155

REMARKS

Claims 1-28 are currently pending in the patent application. The Examiner has rejected Claims 1, 2, 4-11, 13-17, 19-22 and 24-28 under 35 USC 102 as being anticipated by Lumelsky; and, has rejected Claims 3, 12, 18, and 23 under 35 USC 103 as being unpatentable over the teachings of Lumelsky in view of Packer. Applicants herein present amendments to the language of several of the claims. Applicants note that the amendments are being introduced to improve the readability of the claims (Claims 9 and 7) and to more particularly state steps (Claims 10 and 21). The amendments are not made to distinguish over the cited art and do not introduce new matter. For the reasons set forth below, Applicants respectfully assert that all of the pending claims are patentable over the cited prior art.

The present application teaches and claims a system, program storage device and method for scheduling the delivery of data packets, as well as a method for interleaving packets, a method for determining minimum initial delay for delivery of packets, and a method for determining minimum buffer size. All of the independent

YOR919990545   -15-

Serial No. 09/663,490
Art Unit No. 2155

claims, Claims 1, 10, 16, 21, 27, and 28 include the steps of creating a list of virtual data packets representative of all data packets to be scheduled for delivery from the server to the client; calculating a delivery deadline for each virtual data packet based on the communications bandwidth from the server to the client; and, sorting the list of virtual data packets based on the delivery deadlines calculated for each virtual data packet. The independent claims then additionally recite different steps for completing the stated method and the dependent claims further modify the features of the independent claims.

Applicants respectfully assert that the Lumelsky patent does not teach or suggest a system, program storage device, or method which includes those basic steps of creating a list of virtual data packets representative of all data packets to be scheduled for delivery from the server to the client; calculating a delivery deadline for each virtual data packet based on the communications bandwidth from the server to the client; and, sorting the list of virtual data packets based on the delivery deadlines calculated for each virtual data packet, let alone the additionally recited limitations set forth in independent Claims 1, 10, 16, 21,

YOR919990545   -16-

Serial No. 09/663,490
Art Unit No. 2155

27, and 28, as well as those recited in the dependent claims which depend therefrom.

The Lumelsky patent is directed to a system and method for resource management and load distribution for a multiple server internet environment. Lumelsky controls or shapes the environment by controlling the storage and delivery of object replicas based on historical demand for the objects. Lumelsky treats each server as a collection of objects and dynamically determines which objects will be stored and/or replicated on each server in order to optimize response to requests.

The Examiner has cited lengthy passages of Lumelsky, rather than citing specific language as anticipating the claim features. Applicants fail to find the Lumelsky teachings which are supposed to anticipate the claim language. Applicants have reviewed the cited passages and respectfully assert that Lumelsky does not teach or suggest the invention as claimed. With specific reference to the claim language, Applicants do not see any teachings in the passage found from Col. 8, line 51 to Col. 9, lines 45 which detail creating a list of virtual data packets representative of all data packets to be scheduled for

YOR919990545   -17-

Serial No. 09/663,490
Art Unit No. 2155

delivery from one server to a client.   In the cited
passages, Lumelsky describes the general system (Fig. 4) for
implementing the method with a intermediary controller for
determining demand and for storing object replicas at
multiple servers as a function of the determined demand, and
defines terms such as "request stream" for the temporal
sequence of client requests (see: Col. 9, lines 21-23).
There is nothing in the cited passage, however, about
creating a list of virtual data packets to be scheduled.

With regard to the claimed step of calculating a
delivery deadline for each virtual data packet based on the
communications bandwidth from the server to the client,
Applicants first reiterate that the Lumelsky patent does not
teach or suggest virtual data packets. Moreover, there is
nothing in the cited passages which teaches or suggests
calculating a delivery deadline for data packets, let alone
for virtual data packets, based on the communications
bandwidth from a server to the client. What is taught in
the cited Lumelsky passages found from Col. 9, line 46
through Col. 10, line 48 is a description of the components
of the intermediary controller and the initial step taken by
the intermediary controller in response to receipt of a

YOR919990545   -18-

Serial No. 09/663,490
Art Unit No. 2155

client request. The intermediary controller consults a
replica directory to determine which server(s) have
requested objects or replicas of requested objects.
"Tentative placements" are determined based on which servers
hold replicas. "Tentative placements" refer to potential
replica storage at servers. There is nothing in the cited
passage about a list of virtual data packets, nothing about
a delivery deadline for a data packet, and no teaching of
calculating a delivery deadline for a data packet.

Finally, with respect to the claim feature of sorting
the list of virtual data packets based on the delivery
deadlines calculated for each virtual data packet,
Applicants reiterate that the previously-discussed Lumelsky
passages do not teach or suggest the steps of creating a
list of virtual data packets or of performing calculations
based thereon. Furthermore, the cited passages found from
Col. 10, line 49 through Col. 12, line 53 neither describe
nor suggest sorting a list of virtual data packets based on
calculated delivery deadlines. Applicants have review the
passages and note that the cited passages describe the
following: server identifiers (Col. 10, line 49 through Col.
11, line 23); controller components including a negotiator

YOR919990545   -19-

Serial No. 09/663,490
Art Unit No. 2155

and a replication placement module (Col. 11, line 24 through Col. 12, line 3) for determining at which server to store a replica; controller components for tracking demand for objects (Col 12, line 4 through line 13); and controller components for relaying control information between the controller and the servers (Col. 12, line 14 through line 52). Applicants respectfully assert that none of the cited passages provide any teachings or suggestions of sorting a list of virtual data packets, or any list, based on calculated delivery deadlines.

It is well established under U. S. Patent Law that, for a reference to anticipate claim language under 35 USC 102, that reference must teach each and every claim feature. Since the Lumelsky patent does not teach the steps of creating a list of virtual data packets representative of all data packets to be scheduled for delivery from the server to the client; calculating a delivery deadline for each virtual data packet based on the communications bandwidth from the server to the client; or, sorting the list of virtual data packets based on the delivery deadlines calculated for each virtual data packet, it cannot be maintained that the Lumelsky patent anticipates the

YOR919990545   -20-

Serial No. 09/663,490
Art Unit No. 2155

invention as claimed. Accordingly, Applicants respectfully
request withdrawal of the anticipation rejections of the
independent claims, Claim 1, 10, 16, 21, 27 and 28, and of
those claims which depend therefrom and add further
limitations thereto.

The Examiner has further cited the Packer patent
teachings in combination with Lumelsky in rejection Claims
3, 12, 18, and 23. While the Packer patent does teach a
method for detecting data rate in a packet communication
environment, Applicants respectfully assert that the Packer
patent does not provide the teachings which are missing from
the Lumelsky patent. Neither Lumelsky nor Packer teaches
the steps of creating a list of virtual data packets
representative of all data packets to be scheduled for
delivery from the server to the client, calculating a
delivery deadline for each virtual data packet based on the
communications bandwidth from the server to the client, and,
sorting the list of virtual data packets based on the
delivery deadlines calculated for each virtual data packet.
Moreover, the Packer patent teachings regarding detecting
packet rate are directed to using measured data rates for
packets which have been delivered. Detecting packet rates

YOR919990545   -21-